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ABSTRACT

A system of task analysis and positive reinforcement was used in the vocational training of a 19-year-old trainable retarded youth (MA=6 years). The task of polishing shoe skates was analyzed and programmed into 29 steps and was reinforced with praise and money. The trainee learned the task in 13 sessions (approximately 1 month) and was employed at a skating rink for 6 months. Although a gradual increase in the number of errors resulted in the trainee returning to the sheltered workshop, results indicated that with proper techniques trainable retardates are capable of learning more than it was traditionally assumed. (LS)

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POSITIVE REINFORCEMENT IN THE VOCATIONAL TRAINING OF A TRAINABLE MENTAL RETARDATE: A CASE REPORT

Craig M. Peterson

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POSITIVE REINFORCEMENT IN THE VOCATIONAL TRAINING OF A TRAINABLE MENTAL RETARDATE: A CASE REPORT

Craig M. Peterson

"The principle objective of the rehabilitation of retarded persons is to render them as fully capable as possible of meeting all of the responsibilities of membership in a community including those which have to do with work" (Heber, 1965).

Sheltered workshops have been the typical setting for the trainable retardate to acquire vocational skills (DiMichael, 1966; Meadow and Greenspan, 1961). However, the policy of placing what could be potentially employable individuals in sheltered workshops appears open to question. Most workshops have neither the staff nor the time to carry out the necessary training to prepare the trainable retardate for competitive employment. Thus, such settings will be of limited usefulness in community placement to the extent that they fail to provide trainees with realistic work experiences.

There are a number of jobs available in most communities that would provide excellent opportunities for trainables to learn about the world of work. These jobs include janitorial work, assembly line jobs in manufacturing plants, and helpers in various businesses such as laundries and bakeries. With appropriate training, retardates could be taught to perform them.

A new type of training procedure has recently been developed (Crosson, 1969) that shows promise of achieving this goal. This procedure,

which is based on principles of operant conditioning, involves the analysis and programming of the work task.

The task is analyzed in two stages: first with respect to the kind and number of operant responses that make up the task, and secondly with respect to the stimuli or cues which are associated with each of the operants. The program that is compiled from an analysis of the task is used as a guide in training.

Initially, the trainer demonstrates in their proper sequence the components of the task, and the trainee is prompted to model this behavior. He then repeats each response a number of times. However, this may vary depending on the complexity of the task. Sometimes large groups or the entire sequence of responses can be presented without the necessity of repeating each one individually.

Verbal praise and tokens or money are used as reinforcers to facilitate acquisition of the task. Both kinds are administered on a continuous schedule to the trainee until the required responses are reliably emitted in the presence of the proper cues. Once the behavior is maintaining itself reasonably well, verbal reinforcers are gradually faded out. At the same time, the token or money reinforcement is gradually shifted to higher order schedules in order to match the "natural" salary schedule of the work setting.

When the trainee has learned the task and the employer is satisfied with the results, the trainee is placed on the job. Follow-up visits are made from time to time to check on the progress of the trainee and to correct any problems that may arise.

CASE STUDY

Procedure

The training procedures outlined above were applied to a trainable retarded youth who was enrolled in the sheltered workshop program at the Pearl Buck School in Eugene, Oregon. The trainee was a 19-year old male with a mental age of six and no apparent physical impairments.

A local skating rink had requested a worker to polish rental roller skates. The job involved polishing skates for about four hours a day for four days a week.

Before any actual training was undertaken, an analysis of the task was performed. A total of twenty-nine steps were included in the analysis and programming of the task (see Table I). For example, the first response in the sequence was "grasp top of leather portion of shoe skate with the preferred hand." The fourth response was "pick up the polishing brush." And the last step in the program was "tip the shoe on its side until the unfinished side is facing up, and one wheel of the front set of wheels and one wheel of the back set are balanced in a tilted position on the floor of the polishing carrel."

Incidentally, the polishing carrel was a device that was built by the staff to facilitate training of this task. It consisted of a flat bench on which to polish skates and a storage rack above the bench which held three pair of polished and three pair of unpolished skates.

Initially, the trainee was given both praise and money (a nickel per skate) on a continuous schedule of reinforcement for completing the task. Then both reinforcers were shifted by the trainer to higher order

fixed-rato schedules. Gradually the verbal praise was phased out of the situation. The schedule for money was shifted to a payoff for all completed skates every eighth work day (every other week).

The acquisition of the task was measured in terms of rate per minute (RPM) which was the number of completed skates for a given work day divided by the time it took to complete them. The number of errors the trainee made in polishing a skate was also calculated. An error was defined as spilling polish on the sole of the skate, missing a portion of the skate with the polish, etc.

The trainee was considered ready to be placed on the job if he could maintain a RPM of 0.30 with few errors and no reinforcements from the trainer over a period of three work days.

Results

The trainee was able to learn the task in a total of thirteen sessions over a period of about a month. (See Figure I) He was also instructed during this time in how to use the city bus service to transport himself to and from the job.

The trainee was employed at the skating rink for six months. As the follow-up data in Figure I indicates, his production rate continued to stay above the criterion level. However, the number of errors also increased during this period of time. Measures were attempted to correct the problem such as allowing him free time to skate contingent upon making fewer errors, but were largely unsuccessful. As a result, the trainee was returned to the sheltered workshop and is currently undergoing further training there.

Discussion

The results indicate that the training method described in this paper can be applied with some success in the case of one trainee. However, additional study is needed to provide a more general indication of its effectiveness and practicality.

To help provide this information, a different trainee is currently being trained at the same skating rink. Another trainable retardate is being trained in a different setting as a baker's helper. The job involves the mixing of large amounts of dough for donuts, and the placing of pastries on trays for baking after they have been manufactured. Thus far, both trainees have been doing well.

While more progress needs to be made, it is clear that with the proper techniques, trainable retardates are capable of learning more than it was traditionally assumed.

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TABLE I

Program for Polishing Shoe Skates

Materials

1. Shoe polish*
2. One-inch brush
3. Rag
4. Self-applicating bottle of polish**
5. Shoe skates
6. Polishing carrel

* Black polish for men's skates; white polish for women's.

**Brown polish for men's skates; red polish for women's.

Stimulus	Response
1. One pair of unpolished shoe skates.	1. Grasp top of leather uppers of one shoe skate with the preferred hand.
2. Response 1.	2. Insert the other hand into the shoe as far forward toward the toe of the shoe, with the back of the hand pressed firmly against the surface of the inner sole.
3. Hand in shoe; back of hand on the inner sole.	3. Tilt the shoe toward the body until the toe of the shoe touches the floor of the polishing carrel.
4. Toe of shoe and the front wheels on the floor of the polishing carrel.	4. Pick up the polishing brush.
5. Brush in preferred hand.	5. Dip the brush in the polish about half an inch.
6. Brush in polish.	6. Remove the brush and drawing it lightly against the edge of the top of the inside of the polish container, remove the excess polish--repeat if necessary.

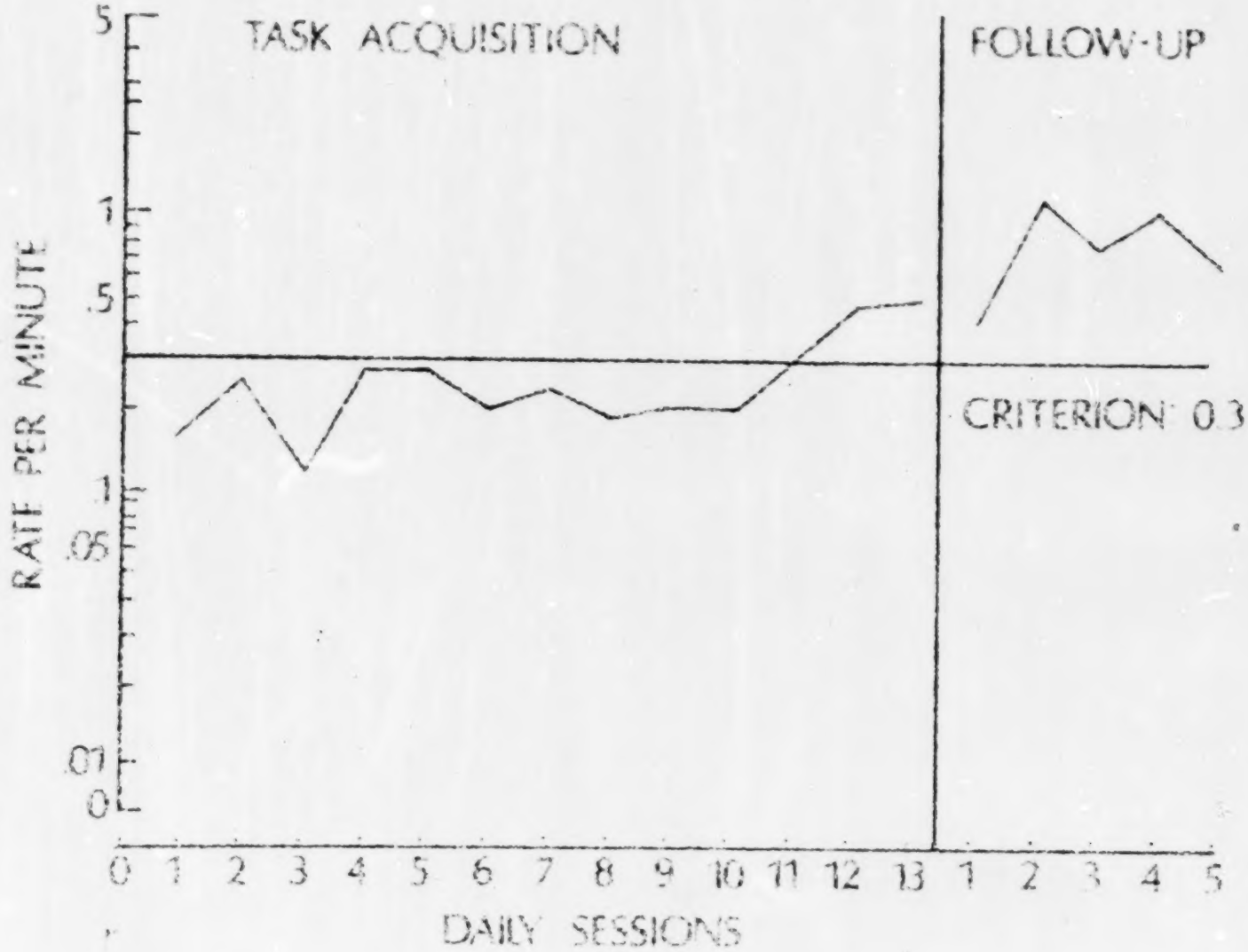
7. Prepared brush.	7. Place the tip of the brush on the leather surface and against the side of the strip which runs the vertical length of the heel of the shoe, at the junction of the strip and the laminated heel.
8. Response 7.	8. Draw the brush along the surface parallel to the laminated heel until no polish is left in the brush.
9. Brush out of polish.	9. Repeat steps 5 & 6.
10. Stimulus 7.	10. Bring the brush up to the strip again at a position immediately adjacent to the area covered by previous strokes, pushing the bristles under the strip as much as possible without getting polish on the strip.
11. Response 9.	11. Draw the brush along the leather surface away from the strip, parallel to and just touching the area previously polished.
12. Brush out of polish.	12. Repeat steps 5 & 6.
13. Stimulus 7.	13. Repeat steps 10 & 11 again and again, moving sequentially up the strip until all of the surface adjacent to the strip is covered on the one side of the skate--repeat steps 5 & 6 as necessary.
14. All leather surface adjacent to strip covered on one side.	14. Put the brush down on the floor of the polishing carrel or on the polish container.

15. Stimulus 3 plus stimulus 14.	15. Turn the hand that is inside the shoe until the palm and fingers are touching the inside sole, using the other hand to steady the shoe. The shoe will "automatically" be turned until the toe points away from the body.
16. Response 15.	16. Push the hand that is inside the shoe as far forward in the shoe as possible--toward the toe.
17. Response 16.	17. Tip the shoe on its side until the unfinished side is facing up, and one wheel of the front set of wheels and one wheel of the back set are balanced in a tilted position on the floor of the polishing carrel.
18. Shoe in position outlined in Response 17.	18. Pick up the brush and repeat steps 5 & 6.
19. Response 17 & 18.	19. Repeat steps 7-13.
20. Leather surface covered adjacent to strip: surface immediately adjacent to the laminated heel and outer sole is unpolished.	20. Repeat step 8, moving parallel to and not quite touching the laminated outer sole and the rubber bumper on the toe of the shoe, until all of area immediately adjacent to the laminated outer sole and heel is polished
21. Rest of uppers is unpolished.	21. Complete the polishing of the uppers of the shoe until all the surface excepting laces and tongue is polished.
22. All of leather area is polished.	22. Put the brush down. Response 14.

23. Unpolished strip.	23. Steadying the shoe with one hand, withdraw the hand that is in the shoe and grasp the top of the shoe with the thumb held firmly against the outside of the strip and the fingers of the same hand pressed against the <u>inside</u> of the strip approximately halfway between the top and the bottom of the shoe.
24. Response 23.	24. Pick up the felt-tipped polish bottle and place the felt tip of the polish bottle at the top of the strip.
25. Bottle in place on strip.	25. Press lightly and polish the strip with primarily vertical strokes until the strip is polished down to but not including the laminated heel.
26. Response 25--strip polished.	26. Remove the hand from the shoe. Put the bottle down at the same time.
27. Response 26; bottle on table.	27. Replace the cap on the polish bottle.
28. Polished wet shoe.	28. Place the shoe on the drying rack.
29. Stimulus 1.	29. Repeat steps 1-28.

FIGURE 1

PERFORMANCE DATA ON TRAINEE FOR POLISHING SKATES



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